

## **Certification for Fine Particulate Matter (PM<sub>2.5</sub>) National Ambient Air Quality Standards Clean Air Act Sections 110(a)(1) and (2)**

In accordance with U. S. EPA's *Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)* dated September 2013, the Tennessee Department of Environment and Conservation, Division of Air Pollution Control has reviewed the provisions in its existing EPA-approved SIP and has determined that the existing SIP contains or references provisions that satisfy the requirements of section 110(a)(2), as applicable, for purposes of implementing the new or revised NAAQS.

The following certification cites the specific statutes, regulations, or non-regulatory measures, as appropriate, in the EPA-approved SIP and explains how these provisions meet the specific infrastructure element requirements. This certification addresses Tennessee's obligations under §§110(a)(1) and (2) of the Clean Air Act for the following National Ambient Air Quality Standards:

**Fine Particulate (PM<sub>2.5</sub>):** A revised NAAQS for fine particulate matter was promulgated by EPA on December 14, 2012. This rule establishes a new primary ambient air quality standard of 12 µg/m<sup>3</sup> (annual average).

States must submit State Implementation Plans (SIPs) for areas designated as nonattainment for any NAAQS. SIPs must provide for attainment of the NAAQS as expeditiously as practicable, but not later than five years from the date of the nonattainment designation. States are also required to adopt and submit "infrastructure" SIPs to EPA to address the requirements of §§110(a)(1) and (2) of the Clean Air Act within three years after the promulgation of new or revised NAAQS. These "infrastructure SIPs" provide assurances of State resources and authorities, and establish the basic State programs, to implement, maintain, and enforce new or revised standards.

The basic infrastructure requirements of §§110(a)(1) and (2) are listed on the following pages. Tennessee's State Implementation Plan meets all of the required elements of §§110(a)(1) and (2), as indicated below.

***Emission limits and other control measures:*** *§110(a)(2)(A) requires SIPs to include enforceable limits and other control measures, means or techniques, schedules for compliance, and other related matters.*

Pursuant to §68-201-105(a) of the Tennessee Air Quality Act ("the Act")<sup>1</sup>, the Tennessee Air Pollution Control Board and the Division of Air Pollution Control have the authority to:

- Promulgate rules and regulations to effect the intent and purpose of the Act, including ambient air quality standards; emission standards; general policies or plans; a system of permits; a schedule of fees for review of plans and specifications, issuance or renewal of permits, and inspection of air contaminant sources;
- Authorize the Technical Secretary to issue permits that contain all applicable provisions of the Act and of the Federal Clean Air Act;
- Hold hearings and issue such orders and determinations as may be necessary to effect the intent and purpose of the Act; and
- Cause to be instituted in a court of competent jurisdiction, legal proceedings to compel compliance with any order issued by the Board, requirement of the Act, or rule or regulation adopted pursuant to the Act.

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<sup>1</sup> A copy of the Tennessee Air Quality Act is enclosed as Attachment 1.

The Tennessee Air Pollution Control Regulations (TAPCR)<sup>2</sup> are adopted by the Tennessee Air Pollution Control Board and include enforceable limits and other control measures, means or techniques, schedules for compliance, and other related matters.

<b>Table 1: SIP Rules that Establish Enforceable Limits and Other Control Measures, Means or Techniques, Schedules for Compliance, and Other Related Matters (CAA §110(a)(2)(A))</b>		
<b>TAPCR Rule</b>	<b>Description</b>	<b>Last SIP Revision<sup>3</sup></b>
1200-03-03	Establishes primary and secondary ambient air quality standards for Tennessee.	March 29, 1985
1200-03-04	Establishes controls on open burning.	March 29, 1985
1200-03-05	Establishes limits on the discharge of visible emissions	August 15, 1997
1200-03-06	Establishes limits on particulate matter emissions from non-process emission sources and general requirements for non-process gaseous emissions.	November 23, 1988
1200-03-07	Establishes limits on particulate matter and total reduced sulfur from process emission sources and general requirements for process gaseous emissions.	June 12, 1996
1200-03-08	Establishes regulations for control of fugitive dust	June 24, 1982
1200-03-09	Establishes requirements for construction and operating permits.	October 28, 2002 <sup>4</sup>
1200-03-14	Establishes limits for sulfur dioxide emissions from designated source categories.	March 19, 1996
1200-03-18	Establishes VOC control requirements for designated source categories	February 27, 1995
1200-03-19	Establishes specific emission standards for existing air contaminant sources located in or significantly impacting upon an additional control area.	November 12, 1999
1200-03-20	Establishes requirements to limit excess emissions during periods of startup, shutdown, and malfunction.	February 6, 1980
1200-03-21	Establishes a procedure for a source to request alternate emission limits.	April 18, 1994
1200-03-22	Establishes standards for lead emissions from new sources and significant existing sources of lead.	August 12, 1985
1200-03-23	Establishes general requirements for visibility protection.	July 2, 1997
1200-03-24	Establishes requirements for Good Engineering Practice stack height.	October 19, 1988
1200-03-27	Establishes limits for NO <sub>x</sub> emissions from designated source categories.	December 27, 2005 <sup>5</sup>
1200-03-29	Inspection and maintenance requirements for light duty motor vehicles.	August 26, 2005

***Ambient air quality monitoring/data system:*** §110(a)(2)(B) requires SIPs to include provisions to provide for establishment and operation of ambient air quality monitors, collecting and analyzing ambient air quality data, and making these data available to EPA upon request.

<sup>2</sup> All TAPCR provisions listed in this document have been incorporated into the SIP.

<sup>3</sup> Date approved by EPA, unless otherwise noted.

<sup>4</sup> SIP Revisions TN-294-1, TN-294-2, and TN-294-3 were submitted to EPA on May 28, 2009.

<sup>5</sup> TAPCR 1200-03-27-.10 (CAIR Annual NO<sub>x</sub> Trading Program) and 1200-3-27-.11 (CAIR Ozone Season NO<sub>x</sub> Trading Program) were approved into an abbreviated SIP in the Federal Register notice dated August 20, 2007. A revision to TAPCR 1200-03-27-.11 was submitted to EPA in July 2009

TCA 68-201-105(b)(4) authorizes the Department of Environment and Conservation the authority to provide such technical, scientific and other services as may be required for carrying out the provisions of the Tennessee Air Quality Act. Tennessee currently collects ambient air quality monitoring data from a network of monitors located throughout the State sited and operated in accordance with 40 CFR 50, 40 CFR 53, and 40 CFR 58. The data from the monitoring network is reported to EPA in accordance with the Federal reporting requirements, including:

- Monitor air quality for the relevant NAAQS pollutant(s) at appropriate locations in accordance with the EPA's ambient air quality monitoring network requirements.
- When a monitoring site is determined to be required for comparison to the NAAQS, insure that the relevant CFR monitoring requirements are evaluated and complied with for each required pollutant.
- Submit data to the EPA's Air Quality System (AQS) in a timely manner in accordance with 40 CFR 58.
- Provide information to the EPA Regional Office regarding air quality monitoring activities, including a description of how the air agency has complied with monitoring requirements, and an explanation of any proposed changes to the network. Tennessee submits an Annual Network Monitoring Plan, which also addresses the planned changes to the network.
- Obtain EPA's approval of any planned changes to monitoring sites or to the network plan, consistent with applicable requirements in 40 CFR 58.14 ("System Modification").
- Routinely submit written request describing any proposed changes to the air monitoring network to EPA for review and approval before any planned changes to the monitoring network are made.

***Program for enforcement of control measures:*** §110(a)(2)(C) requires SIPs to include a program providing for enforcement of all SIP measures and the regulations of construction of new or modified stationary sources to meet prevention of significant deterioration (PSD) and nonattainment new source review (NNSR) requirements.

This element consists of three sub-elements; enforcement, state-wide regulation of new and modified minor sources and minor modifications of major sources; and preconstruction permitting of major sources and major modifications in areas designated attainment or unclassifiable for the subject NAAQS as required by CAA title I part C (i.e., the PSD program).

**Enforcement:** TAPCR 1200-03-13<sup>6</sup> states that failure to comply with any provision of the Tennessee Air Pollution Control regulations constitutes a violation thereof, which shall subject the person or persons responsible therefore to any and all the penalties provided by law. Pursuant to Tennessee Code Annotated (TCA) 68-201-116, the Technical Secretary is authorized to issue orders requiring correction of violations of any part of the Tennessee Air Quality Act, or of any regulation promulgated thereunder. Violators are subject to civil penalties of up to twenty-five thousand dollars (\$25,000) per day for each day of violation and for any damages to the State resulting from the violations.

**Regulation of minor sources and minor modifications:** Pursuant to TAPCR 1200-03-09-.01 (Construction Permits) and 1200-03-09-.03 (General Provisions), the Division of Air Pollution Control has the authority to regulate the construction of new or modified minor stationary sources. Table 2 identifies specific preconstruction program requirements.

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<sup>6</sup> Approved by EPA May 31, 1972.

**Table 2: Preconstruction Requirements**

<b>Rule Citation</b>	<b>Requirement</b>
1200-03-09-.01(1)(a)	Except as specifically exempted in TAPCR 1200-03-09-.04, no person shall begin the construction or modification of an air contaminant source without first having applied for and received a construction permit.
1200-03-09-.01(1)(b)	The application for a construction permit shall be made on forms available from the Technical Secretary not less than 90 days prior to the estimated starting date of construction. Sources identified in TAPCR 1200-03-09-.01(4) shall apply not less than 120 days prior to the estimated date of construction.
1200-03-09-.01(1)(c)	In addition to the information provided in construction permit application forms, the Technical Secretary may require submission of information on the nature and amounts of air contaminants to be emitted by the source or by associated mobile sources, and any other information necessary to insure compliance.
1200-03-09-.01(1)(d)	Construction or modification of an air contaminant source must be in accordance with the approved construction permit application, the provisions and stipulations set forth in the construction permit, all provisions of the Tennessee Air Pollution Control Regulations, any applicable measures of the control strategy, and all provisions of the Tennessee Air Quality Act.
1200-03-09-.01(1)(e)	No construction permit shall be issued by the Technical Secretary if the approval to construct or modify an air contaminant source would result in a violation of the ambient air quality standards specified in Chapter 1200-03-03, would cause a violation of any other regulatory requirement under this Division, 1200-03, would result in a violation of applicable portions of the control strategy, or would interfere with attainment or maintenance of a national ambient air quality standard in a neighboring state.
1200-03-09-.01(1)(f)	Source impact analysis shall demonstrate that allowable emission increases would not cause or contribute to air pollution in violation of any ambient air quality standard in Chapter 1200-03-03, of any national ambient air quality standard, or any applicable maximum allowable increase as defined in paragraph 1200-03-09-.01(4).
1200-03-09-.01(1)(g)	The degree of emission limitation required of any source for control of any air contaminant must not be affected by so much of any source's stack height that exceeds good engineering practice or by any other dispersion technique except as provided for in TAPCR 1200-03-24.
1200-03-09-.01(1)(h)	The Department shall on a monthly basis notify the public, by advertisement in a newspaper of general circulation in each air quality control region in which the proposed source or modification would be constructed, of the applicants seeking to obtain a permit to construct or modify an air contaminant source. This notice shall specify the general vicinity or location of the proposed source or modification, the type of source or modification, and opportunity for public comment. Comments shall be in writing and delivered to the Technical Secretary within thirty (30) days after the publication of the public notice.
1200-03-09-.03(1)	Requirement to comply with these regulations at the earliest practicable time, authority of the Board to require early compliance <sup>7</sup> .
1200-03-09-.03(2)	Prohibition of circumvention <sup>8</sup> .

<sup>7</sup> There are slight differences in the SIP language and the State rule language. The SIP language references "emission regulations as contained in Chapter V, VI, VII, VIII of these regulations," and TAPCR requires compliance with "emission regulations as contained in other chapters of these regulations."

<sup>8</sup> There are slight differences in the SIP language and the State rule language. The TAPCR language includes examples of activities that are considered circumvention.

**Table 2: Preconstruction Requirements**

<b>Rule Citation</b>	<b>Requirement</b>
1200-03-09-.03(3)	Prohibition of discharges that cause a traffic hazard <sup>9</sup> .
1200-03-09-.03(4)	Requirement to file emissions data on forms available from the Technical Secretary <sup>10</sup> .
1200-03-09-.03(6)	Permits are not transferrable from one person to another <sup>11</sup> .
1200-03-09-.03(7)	Authority to suspend or revoke permits for noncompliance.
1200-03-09-.03(8)	Authority to impose Federal regulations on permits <sup>12</sup> .

Tennessee has a minor source preconstruction program in place to regulate construction or modification of minor sources in accordance with the regulations cited above.

**PSD program:** TAPCR 1200-03-09-.01(4) (Prevention of Significant Deterioration of Air Quality) and 1200-03-09-.01(5) (Growth Policy) provide for the regulation of construction of new or modified stationary sources to meet prevention of significant deterioration (PSD) and Nonattainment New Source Review (NNSR) requirements, respectively. Tennessee's PSD regulations include the following updates:

- Ozone Implementation NSR Update (recognizing NO<sub>x</sub> as an ozone precursor for PSD purposes). Submitted by Tennessee May 28, 2009, approved by EPA February 7, 2012.
- Greenhouse Gas Tailoring Rule (regulation of greenhouse gases under Tennessee's PSD program). Submitted by Tennessee August 30, 2010, and revised January 11, 2012. Approved by EPA February 28, 2012.
- 2008 NSR PM<sub>2.5</sub> Implementation Rule (requires NSR permits to address directly emitted PM<sub>2.5</sub> and precursor pollutants; establishes significant emission rates for direct PM<sub>2.5</sub> and precursor pollutants, including SO<sub>2</sub> and NO<sub>x</sub>; establishes PM<sub>2.5</sub> emission offsets; provides exceptions to PM<sub>10</sub> grandfather policy; and accounts for condensables in PM<sub>2.5</sub> and PM<sub>10</sub> emission limits in PSD or nonattainment NSR permits, and adopts interpollutant policy). Submitted by Tennessee July 29, 2011, approved by EPA July 30, 2012
- 2010 NSR PM<sub>2.5</sub> Increment Rule (establishes PM<sub>2.5</sub> increments pursuant to CAA §166(a) to prevent significant deterioration of air quality in areas meeting the NAAQS). Submitted by Tennessee May 10, 2013, approved by EPA July 25, 2013.

**Interstate transport:** §110(a)(2)(D) requires SIPs to include provisions prohibiting any source or other type of emissions activity in one State from contributing significantly to nonattainment in another State or interfering with maintenance of the NAAQS in another State, or from interfering with measures required to prevent significant deterioration of air quality or to protect visibility in another State. Each such plan shall contain adequate provisions insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement).

<sup>9</sup> The SIP adds, "...or an interference with normal means of public transportation."

<sup>10</sup> The SIP adds a requirement to file data at least once per year. The TAPCR language requires affected sources to file revisions within 30 days if any changes invalidate the original data.

<sup>11</sup> The TAPCR language adds, "Applications for construction permits by the new owner or operator of the new air contaminant source, or by the owner or operator of the air contaminant source at the new location shall be required as if there had been no previous construction permit issued. The new construction permit will address only rules in effect at the time of its issuance."

<sup>12</sup> TAPCR 1200-03-09-.03(8) is not included in the SIP.

**Significant Contribution to Nonattainment and Interference with Maintenance:** EPA's September 25, 2009, memorandum, *Guidance on SIP elements Required Under Sections 110(a)(1) and (2) for the 2006 24-Hour Fine Particle (PM<sub>2.5</sub>) National Ambient Air Quality Standards (NAAQS)*, states that each submission must explain whether or not emissions from the State significantly contribute to nonattainment of the NAAQS in any other State and if so, address the impact. The State's conclusion must be supported by an adequate technical analysis, which may include emissions, meteorological conditions, monitored ambient concentrations within the State and in downwind States, the distance to the nearest nonattainment area, and air quality modeling. EPA believes that it would be appropriate for States to consider the impact of current or future emissions on nearby nonattainment areas and evaluate the air quality impact and potential mitigation strategies.

To determine whether the SIP is adequate to address interstate transport, Tennessee considered the existing PM<sub>2.5</sub> nonattainment areas in the eastern United States.

<b>Table 3: Area Designations for the 2012 Annual PM<sub>2.5</sub> Standard</b>		
<b>State</b>	<b>Area Name</b>	<b>EPA Designated Nonattainment Counties</b>
OH	Cleveland, OH	Cuyahoga, OH
		Lorain, OH
PA	Delaware County, PA	Delaware, PA
	Lebanon County, PA	Lebanon, PA
	Allegheny, PA	Allegheny, PA

For the sake of comparison, Tennessee examined EPA's Transport Rule air quality modeling<sup>13</sup> to estimate the downwind impact of in-state SO<sub>2</sub> emissions, which indicated sulfate contributions above the 2012 significance thresholds for the same counties listed above (1% contribution)<sup>14</sup>. These contributions are shown in Table 4. Nitrate contributions were also examined, but were well below the significance level. The highest ammonium nitrate contribution was 0.01 µg/m<sup>3</sup> (Cuyahoga County, Ohio).

<b>Table 4: Ammonium Sulfate Contributions to Annual PM<sub>2.5</sub> (µg/m<sup>3</sup>)</b>						
<b>Receptor Monitor ID</b>	<b>Receptor State</b>	<b>Receptor County</b>	<b>2012 Base Average Annual PM<sub>2.5</sub> Design Value</b>	<b>2012 Base Maximum Annual PM<sub>2.5</sub> Design Value</b>	<b>TN</b>	<b>&gt;0.12?</b>
390350027	Ohio	Cuyahoga	14.50	15.13	0.17	Yes
390350034	Ohio	Cuyahoga	12.93	13.23	0.16	Yes
390350038	Ohio	Cuyahoga	16.26	16.95	0.18	Yes
390350045	Ohio	Cuyahoga	15.42	15.91	0.18	Yes
390350060	Ohio	Cuyahoga	16.02	16.54	0.17	Yes
390350065	Ohio	Cuyahoga	14.96	15.40	0.18	Yes
390351002	Ohio	Cuyahoga	13.30	13.77	0.17	Yes
390930016	Ohio	Lorain	13.13	13.37	0.18	Yes
390933002	Ohio	Lorain	12.12	12.31	0.14	Yes

<sup>13</sup> 2012 IPM Base Case, which is the most current modeling analysis available to determine Tennessee's PM<sub>2.5</sub> contributions to out-of-state nonattainment areas.

<sup>14</sup> Lebanon County, Pennsylvania was not included in the Transport Rule modeling, and Tennessee considered 3 of the 4 counties that border Lebanon County (Berks, Dauphin, and Lancaster). No data for was available for the fourth county (Schuylkill).

<b>Table 4: Ammonium Sulfate Contributions to Annual PM<sub>2.5</sub> (µg/m<sup>3</sup>)</b>						
<b>Receptor Monitor ID</b>	<b>Receptor State</b>	<b>Receptor County</b>	<b>2012 Base Average Annual PM<sub>2.5</sub> Design Value</b>	<b>2012 Base Maximum Annual PM<sub>2.5</sub> Design Value</b>	<b>TN</b>	<b>&gt;0.12?</b>
420030008	Pennsylvania	Allegheny	14.11	14.33	0.17	Yes
420030021	Pennsylvania	Allegheny	13.65	13.65	0.17	Yes
420030064	Pennsylvania	Allegheny	18.90	19.31	0.17	Yes
420030067	Pennsylvania	Allegheny	11.82	11.89	0.17	Yes
420030095	Pennsylvania	Allegheny	12.77	13.42	0.17	Yes
420030116	Pennsylvania	Allegheny	14.17	14.17	0.17	Yes
420031008	Pennsylvania	Allegheny	14.26	14.49	0.16	Yes
420031301	Pennsylvania	Allegheny	15.13	15.42	0.17	Yes
420033007	Pennsylvania	Allegheny	14.20	14.59	0.18	Yes
420039002	Pennsylvania	Allegheny	13.44	13.44	0.17	Yes
420110011	Pennsylvania	Berks**	14.77	15.11	0.09	No
420430401	Pennsylvania	Dauphin**	13.98	14.59	0.11	No
420450002	Pennsylvania	Delaware	14.16	14.58	0.08	No
420710007	Pennsylvania	Lancaster**	15.18	16.01	0.10	No
**Borders Lebanon County, Pennsylvania.						

In the proposed Transport Rule<sup>15</sup>, EPA identified all monitors projected to be in nonattainment or to have maintenance problems in 2012. The baseline analysis considered emissions reductions associated with the implementation of all federal rules promulgated by December 2008 and assumed that CAIR was not in effect. EPA also assumed that because a state affected by CAIR may not be affected by the new rule, an increase in emissions relative to present levels could occur in that state.

Following this logic, the 2012 base case indicated higher emissions than actual levels in some states. Although the 2012 base case model was not developed for the 2012 standard, the comparison between assumed emissions in the model and actual measured emissions is nevertheless appropriate for this analysis. All known controls required under state laws, NSPS, consent decrees, and other enforceable binding commitments through 2014 were accounted for in the base case. Base case emissions for Tennessee are included in Table 5.

<b>Table 5: Transport Rule 2012 Base Case Emissions for Tennessee</b>		
<b>Pollutant</b>	<b>2005 Base Case Emissions (tons)</b>	<b>2012 Base Case Emissions (tons)</b>
Annual SO <sub>2</sub>	266,148	596,987
Annual NO <sub>x</sub>	102,934	68,425
See Tables IV.C-1, IV.C-2, IV.C-3, and IV.C-4 of the proposed rule.		

These modeled emissions form a basis for comparison to Tennessee's actual emissions for 2012 – 2014, as shown in Table 6. These reported emissions are significantly lower than those predicted by the base case model. A comparison of the 2012 Base Case emissions, which indicated significant sulfate contributions to the nonattainment area receptors in Table 4, and actual SO<sub>2</sub> emissions from Tennessee EGUs in 2012 results in overestimation by a factor of 9 (596,987 tons compared to 66,224 tons). Tennessee asserts that transport

<sup>15</sup> Federal Register, August 2, 2010, pp 45210 – 45465.

modeling based on these actual SO<sub>2</sub> emissions would result in corresponding contributions one-ninth the magnitude of those projected in Table 4, well below the significance threshold of 1%.

Table 6: Acid Rain Program Emissions for Tennessee									
Facility Name	2012			2013			2014		
	SO <sub>2</sub> Emissions (tons)	Heat Input (MMBtu)	SO <sub>2</sub> Emission Rate (lb/MMBtu)	SO <sub>2</sub> Emissions (tons)	Heat Input (MMBtu)	SO <sub>2</sub> Emission Rate (lb/MMBtu)	SO <sub>2</sub> Emissions (tons)	Heat Input (MMBtu)	SO <sub>2</sub> Emission Rate (lb/MMBtu)
Allen	9,609	42,385,856	0.45	9,989	45,285,518	0.44	9,749	43,803,818	0.45
Brownsville CT	1	4,444,409	0.00	0	919,455	0.00	1	1,756,009	0.00
Bull Run	305	18,742,326	0.03	210	9,305,044	0.05	557	30,931,288	0.04
Cumberland	10,101	150,894,973	0.13	7,962	145,530,505	0.11	9,396	146,937,578	0.13
Gallatin	21,732	69,697,034	0.62	20,714	70,348,998	0.59	19,437	62,383,693	0.62
Gleason	0	371,497	0.00	0	96,450	0.00	0	85,663	0.00
John Sevier	4,387	31,300,865	0.28	5	15,753,682	0.00	8	24,049,557	0.00
Johnsonville	17,812	40,349,327	0.88	12,072	32,153,131	0.75	17,519	32,850,329	1.07
Kingston	2,266	46,669,691	0.10	5,423	46,817,152	0.23	1,731	58,848,657	0.06
Lagoon Creek	10	27,567,817	0.00	7	18,346,387	0.00	9	17,571,750	0.00
<b>Total Emissions</b>	<b>66,224</b>			<b>56,382</b>			<b>58,407</b>		
<b>Average Emission Rates</b>			<b>0.25</b>			<b>0.22</b>			<b>0.24</b>

In addition to the evidence of insignificant contributions described above, further sulfur dioxide emissions reductions are currently being implemented at many of Tennessee's largest sources. Tennessee Valley Authority (TVA) is subject to a Federal Facilities Compliance Agreement/Consent Decree<sup>16</sup> (FFCA/CD), which imposes certain requirements on various TVA facilities that are enforceable in accordance with the terms of that agreement. In order to meet the requirements of the FFCA/CD, TVA will retire a number of coal-fired EGUs in their system, including Allen Fossil Plant (all three units by the end of 2018) and Johnsonville Fossil Plant (six units by the end of 2015, the remaining four units by the end of 2017). TVA has also elected to install controls on the four coal-fired units at Gallatin Fossil Plant, including a selective catalytic reduction system and a dry flue gas desulfurization system. These controls must begin continuous operation no later than December 31, 2017, per the requirements of the FFCA/CD. The retirements alone will decrease emissions by roughly 27,268 tons of SO<sub>2</sub> from 2014 levels, a 46% reduction. For EGUs with existing SO<sub>2</sub> and NO<sub>x</sub> controls (Bull Run, Cumberland, and Kingston), the FFCA/CD requires TVA to continuously operate the existing controls on and after the Consent Decree Obligation Date. These control requirements are also being incorporated into each facility's Title V permit.

<sup>16</sup> State of Alabama et. al. v. TVA, Civil Action No. 3:11-cv-00170, filed April 14, 2011, approved June 13, 2011



Upon promulgation of the final Cross State Air Pollution Rule (CSAPR), Tennessee was assigned an annual SO<sub>2</sub> budget<sup>17</sup> (applicable to years 2015 and beyond) of 58,833 tons, with a maximum variability of 10,590 tons. There is also a new unit set-aside allowance of 2,962 tons. The sum of all budgeted SO<sub>2</sub> emissions for the state is in line with the observed actual emissions in 2014 and recent years. Tennessee was also assigned an annual NO<sub>x</sub> budget (applicable to years 2015 and beyond) of 19,337 tons, with a maximum variability of 3,481 tons. The new unit set-aside allowance for NO<sub>x</sub> was set at 387 tons.

Additionally, all coal-fired EGUs in Tennessee are subject to 40 CFR 63 Subpart UUUUU, the Mercury and Air Toxics Standards (MATS), which require further unit level reductions to emissions of mercury, particulate matter, sulfur dioxide, hydrogen chloride, and a number of other hazardous pollutants. Although the MATS provide the option to demonstrate compliance by control of either HCl or SO<sub>2</sub>, flue gas desulfurization as a hydrogen chloride control measure has the co-benefit of high SO<sub>2</sub> capture as well.

The overestimation of emissions in the 2012 base case model compared to actual, budgeted emissions, as well as the significant anticipated reductions to emissions from EGUs in the state support the conclusion that Tennessee will not contribute significantly to designated nonattainment or maintenance areas in downwind states. Based on this analysis, Tennessee asserts that its SIP is sufficient to meet the requirements of element §110(a)(2)(D).

**Interference with PSD:** SIPs must have provisions prohibiting emissions that would interfere with measures required to be in any other air agency's SIP under part C of the Act to prevent significant deterioration of air quality. Because part C requires an air agency's PSD permitting program to address all pollutants subject to regulation under the CAA, the EPA interprets prong 3 to mean that the infrastructure SIP submission should have provisions to prevent emissions of any regulated pollutant from interfering with any other air agency's comprehensive PSD permitting program, in addition to the new or revised NAAQS that is the subject of the infrastructure submission. Moreover, the infrastructure SIP should address the potential for such interference by sources throughout the jurisdiction of the air agency.

Tennessee has a fully approved PSD program, which applies to all regulated NSR pollutants. Tennessee's PSD program includes a regulatory provision, which, consistent with 40 CFR §51.166(q)(2)(iv), requires the permitting authority to notify air agencies whose lands may be affected by emissions from that source (TAPCR 1200-03-09-3.04(4)(1)2)<sup>18</sup>. Tennessee's PSD program applies to all regulated NSR pollutants and satisfies the requirements of EPA's PSD implementation rule(s). Upon promulgation of new or revised implementation guidance for PM<sub>2.5</sub>, Tennessee will adopt any required SIP revisions to address Tennessee's obligations under §110(a)(2)(D).

**Visibility Transport:** Under §110(a)(2)(D)(i)(II), an infrastructure SIP cannot be approved with respect to visibility transport until EPA has issued final approval of SIP provisions that EPA has found to adequately address any contribution of that state's sources to impacts on visibility program requirements in other States. EPA's infrastructure SIP states that this requirement may be satisfied through confirmation that the State has an approved regional haze SIP, which fully meets the requirements of 40 CFR §51.308 or §51.309. §§51.308 and 51.309 require a State participating in a regional planning process to include all measures needed to achieve its apportionment of emission reduction obligations agreed upon through that process. Tennessee is currently developing a SIP submittal with the intent to obtain a fully approved Regional Haze SIP. Upon approval of that submittal, Tennessee's SIP will be adequate with regard to visibility transport.

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<sup>17</sup> *Federal Register*, August 8, 2011, pp 48208 – 48483.

<sup>18</sup> "The Technical Secretary shall make a final determination on the application no later than 6 months after receipt of a complete application... The review process involves performing the following actions... Send a copy of the notice of public comment to the applicant and to officials and agencies having cognizance over the location where the proposed construction would occur as follows: State or local air pollution control agencies, the chief executives of the city and county where the source or modification would be located, any comprehensive regional land use planning agency, the EPA Administrator, and any State or Federal Land Manager whose lands may be affected by emissions from the source or modification."

**Interstate Pollution Abatement and International Air Pollution:** EPA's SIP guidance states that agencies with PSD programs that have been approved into their SIPs should already have a regulatory provision in place, consistent with 40 CFR 51.166(q)(2)(iv), which requires the permitting authority to notify air agencies whose lands may be affected by emissions from that source. Inasmuch as the information that the permitting authority provides to other air agencies is submitted by the source to the permitting authority, EPA considers the notification by the permitting authority to satisfy the requirement of CAA section 126(a)(1)(A) that a new or modified major source subject to part C notify neighboring air agencies of its potential downwind impact. Consistent with 40 CFR §51.166(q)(2)(iv), TAPCR 1200-03-09-3.04(4)(1)2 requires the permitting authority to notify air agencies whose lands may be affected by emissions from that source.

**Adequate resources:** *§110(a)(2)(E) requires States to provide for adequate personnel, funding, and legal authority under State law to carry out its SIP-related issues.*

This element consists of three sub-elements: personnel and funding, State Boards, and local program oversight.

**Personnel and Funding:** EPA's guidance states that the SIP should provide necessary assurances that the air agency has adequate personnel and funding to implement the relevant NAAQS. In accordance with the EPA's regulations at 40 CFR part 51, subpart M ("Intergovernmental Consultation"), the infrastructure SIP submission should identify the organizations that will participate in developing, implementing, and enforcing the EPA-approved SIP provisions related to the new or revised NAAQS and thus require resources for doing so. The infrastructure SIP submission should identify the responsibilities of such organizations and include related agreements among the organizations.

TCA 68-201-105 gives the Tennessee Air Pollution Control Board the power and duty to promulgate rules and regulations to affect the intent and purpose of the Tennessee Air Quality Act, pursuant to the provisions of the Uniform Administrative Procedures Act. The Board may define ambient air quality standards; set emission standards; establish general policies or plans; establish a system of permits; and establish a schedule of fees for review of plans and specifications, issuance or renewal of permits or inspection of air contaminant sources.

TAPCR 1200-03-26 establishes construction fees, annual emission fees, and permit review fees sufficient to supplement existing State and federal funding and to cover reasonable costs associated with the administration of the air pollution control program. These costs include costs associated with review of applications and reports, issuance of permits, source inspections and unit observation, review and evaluation of monitoring results (stack and/or ambient), modeling, and costs associated with enforcement actions (excluding penalties assessed).

The Division of Air Pollution Control has adequate personnel and funding to implement the PM<sub>2.5</sub> NAAQS.

**State Boards:** The infrastructure SIP submission (possibly in combination with earlier submissions already approved by the EPA) would need to include the statutory or regulatory provisions that impose the requirements mandated by CAA section 128 pertaining to certain boards, bodies, and personnel involved in approving permits or enforcement orders. Because CAA section 110(a)(2)(e)(ii) directs states to "provide requirements that the state comply with the requirements respecting state boards under section 128," the provisions that implement CAA section 128 would need to be contained within the SIP. That is, the EPA would not approve an infrastructure SIP submission that only provides a narrative description of existing air agency laws, rules, and regulations that are not approved into the SIP to address CAA section 128 requirements.

Rule 0400-30-17 of the Tennessee Air Pollution Control Regulations<sup>19</sup> addresses the conflict of interest provisions for the Tennessee Air Pollution Control Board and satisfies the requirements of Clean Air Act section 128.

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<sup>19</sup> Last revised June 25, 2013, effective September 23, 2013.

**Local Programs:** EPA's infrastructure SIP guidance states that the infrastructure SIP submission should provide necessary assurances that the state retains responsibility for ensuring adequate implementation of SIP obligations with respect to relevant NAAQS. A state may authorize a local or regional agency to carry out the SIP or a portion of the SIP within that agency's jurisdiction, if the SIP demonstrates that the local agency has the necessary legal authority. However, in these cases the infrastructure SIP submission needs to also provide assurances that the state air agency retains responsibility for ensuring adequate implementation of the SIP. Under subpart L, see 40 CFR 51.232 ("Assignment of legal authority to local agencies").

TCA 68-201-115 (Local Pollution Control Programs) states that any municipality or county in Tennessee may enact regulations not less stringent than the standards adopted for the State or may incorporate by reference any State or Federal regulations.

Before such ordinances or resolutions become effective, the municipality or county must receive a certificate of exemption from the Board. The Board may grant a certificate of exemption in whole or in part, may prescribe a time schedule for various parts of an exemption to become effective, and may make a certificate of exemption conditional or provisional as is deemed appropriate. In granting any certificate of exemption, Tennessee reserves the right to enforce any applicable resolution, ordinance, or regulation of the local program (enforcement proceedings for local program ordinances and regulations are the same as for enforcement of any State regulation).

TCA 68-201-115 directs the Department of Environment and Conservation to frequently determine whether or not any local program meets the terms of the exemption granted and continues to comply with the provisions of the law. If the Department determines that the local program does not meet the terms of the exemption or does not otherwise comply with the law, the board may suspend the exemption in whole or in part until the local program complies with the State standards.

***Stationary source monitoring system:*** §110(a)(2)(F) requires States to establish a system to monitor emissions from stationary sources and to submit periodic emissions reports.

§51.212 (Testing, inspection, enforcement, and complaints) requires SIPs to provide for periodic testing and inspection of stationary sources; establishment of a system for investigating complaints and for detecting violations through the enforcement of appropriate visible emission limitations; enforceable test methods for each emission limit specified in the plan. For the purpose of submitting compliance certifications or establishing violations, the SIP must not preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

- TAPCR 1200-03-10 (Required Sampling, Recording, and Reporting) gives the Technical Secretary the authority to monitor emissions at stationary sources, and to require these sources to conduct emissions monitoring and to submit periodic emissions reports.
- T. C. A. §68-201-105(b)(3) states that the Department of Environment and Conservation has the power and duty to enter at all reasonable times in or upon any private or public property except private residences for the purpose of inspecting and investigating any condition which the department shall have reasonable cause to believe to be an air contaminant source. Tennessee provides for a program of periodic testing and inspection of stationary sources.
- TAPCR 1200-03-12 provides for the identification of allowable test methods.

- Tennessee's SIP does not preclude the use of credible evidence, including the exclusive use of credible evidence, and EPA has determined that the SIP meets the credible evidence requirements set forth in the Agency's May 23, 1994 SIP call letter (Federal Register, January 29, 2000, pp 2877-2880). TCA 68-201 (Tennessee Air Quality Act) empowers the Tennessee Air Pollution Control Board to maintain the air resources of the State and directs the Board and Department to give due consideration to all pertinent facts, and Tennessee's enforcement history demonstrates the use of credible evidence to determine that a source is in violation and to assess penalties for noncompliance.

§51.211 (Emission reports and recordkeeping) requires SIPs to provide for legally enforceable procedures for requiring owners or operators of stationary sources to maintain records of and periodically report: (a) information on the nature and amount of emissions from the stationary sources; and (b) other information as may be necessary to enable the State to determine whether the sources are in compliance with applicable portions of the control strategy. §§51.321 through 51.323 require State agencies to report emissions data and to comply with the requirements of 40 CFR 51 Subpart A.

T. C. A. §68-201-105(b)(2) and (4) state that the Department of Environment and Conservation has the power and duty to require that any person furnish the department information required by it in discharge of its duties and to provide such technical, scientific and other services as may be required for carrying out the provisions of the Tennessee Air Quality Act. TAPCR 1200-03-10-.01(3)(b) requires any affected person to file emission data as directed to do so by the Technical Secretary. Tennessee will continue to comply with the requirements of §51.211 and §§51.321 through 51.323.

***Emergency power:*** §110(a)(2)(G) requires States to provide for authority to address activities causing imminent and substantial endangerment to public health, including contingency plans to implement the emergency episode provisions in their SIP.

Tennessee's emergency powers are outlined in TAPCR 1200-03-15 (Emergency Episode Plan). This rule establishes conditions justifying the proclamation of an air pollution episode (air pollution alert, air pollution warning, or air pollution emergency), specific emissions reductions for each episode level, and emergency episode plan requirements for major sources located in or significantly impacting a nonattainment area<sup>20</sup>.

The Commissioner of the Department of Environment and Conservation has additional powers to issue emergency stop orders to air contaminant sources, as enumerated in TCA 68-201-109. This law provides that if the Commissioner finds that emissions from the operation of one or more air contaminant sources are causing imminent danger to human health and safety, the commissioner may, with the approval of the governor, order the person(s) responsible to reduce or discontinue immediately the emission of air contaminants. The law provides for a hearing to be held before the Commissioner within 24 hours of the order, in which the Commissioner must affirm, modify or set aside the order.

Tennessee has no Priority I, IA, or II regions and is not required to develop a contingency plan for PM<sub>2.5</sub> at this time. Upon promulgation of new or revised guidance for emergency episode plans, Tennessee will adopt any required SIP revisions to address Tennessee's obligations under §110(a)(2)(G).

***Future SIP revisions:*** §110(a)(2)(H) requires States to have the authority to revise their SIPs in response to changes in the NAAQS, availability of improved methods for attaining the NAAQS, or in response to an EPA finding that the SIP is substantially inadequate.

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<sup>20</sup> These emission sources must submit acceptable air pollution episode emissions reduction plan to be followed during the alert, warning, and emergency levels or an air pollution episode.

§68-201-105(a) of the Tennessee Air Quality Act authorizes the Tennessee Air Pollution Control Board to promulgate rules and regulations to effect the intent and purpose of the Act, including ambient air quality standards; emission standards; general policies or plans; a system of permits; a schedule of fees for review of plans and specifications, issuance or renewal of permits, and inspection of air contaminant sources.

***Plan or plan revisions for nonattainment areas:*** §110(a)(2)(I) requires States to meet the requirements of §110(a)(2)(D) as it relates to nonattainment areas when submitting a plan or plan revision.

Tennessee is not required to address this element until EPA designates an area within the state as nonattainment.

***Consultation with government officials:*** §110(a)(2)(J) requires States to provide a process for consultation with local governments and Federal Land Managers carrying out NAAQS implementation requirements pursuant to §121 relating to consultation.

TAPCR 1200-03-34 (Conformity) provides for inter-agency consultation on both transportation and general conformity related issues.

***Public notification:*** §110(a)(2)(J) further requires States to notify the public if NAAQS are exceeded in an area and to enhance public awareness of measures that can be taken to prevent exceedances.

The infrastructure SIP submission needs to show that the air agency does the following: regularly notifies the public of instances or areas in which the new or revised primary NAAQS was exceeded; advises the public of the health hazards associated with such exceedances; and enhances public awareness of measures that can prevent such exceedances and of ways in which the public can participate in regulatory and other efforts to improve air quality. 40 CFR 51.285 ("Public notification"), repeats the language of CAA section 127.

The existing Air Quality Index and Air Quality Forecasting programs provide for a method to alert the public if the NAAQS are exceeded in an area. The current forecasting program provides for notification to the public (Code Orange days) when an exceedance is forecasted to occur in the major metropolitan areas. The Code Orange day corresponds with the primary standard and is directly tied to the air quality index. Some areas of the state are required to have a daily air quality index (AQI) issued to the public. The AQI includes information on the health hazards associated with the pollutant(s) and provides guidance on how to mitigate exposures to sensitive individuals and the population in general and steps to help reduce actions that may contribute to elevated levels of the pollutants in question. The annual network monitoring plan update also includes the previous year's design value for all criteria pollutants and that plan/report is required to be sent out for public participation review and comment each year.

***PSD and visibility protection:*** §110(a)(2)(J) also requires States to meet applicable requirements of part C related to prevention of significant deterioration and visibility protection.

Prevention of significant deterioration (PSD) requirements are addressed in TAPCR 1200-03-09-.01(4) (Prevention of Significant Air Quality Deterioration). As stated above, Tennessee has a fully approved PSD program, which applies to all regulated NSR pollutants. EPA's infrastructure SIP guidance notes that when EPA establishes or revises a NAAQS, visibility requirements under part C do not change, and there are no new visibility protection requirements under part C as a result of a revised NAAQS. Therefore, Tennessee is not addressing the visibility sub-element in this submittal.

***Air quality modeling/data:*** §110(a)(2)(K) requires that SIPs provide for performing air quality modeling for predicting effects on air quality of emissions from any NAAQS pollutant and submission of such data to EPA upon request.

The PSD requirements found in TAPCR 1200-03-09-.01(4) (Prevention of Significant Air Quality Deterioration) specify when modeling and when monitoring (pre- or post-construction) must be performed and that the resulting data be made available for review to EPA. Tennessee has personnel with training and experience to conduct source-oriented dispersion modeling with models approved by the EPA.

Attainment demonstrations submitted to the EPA will provide any required air quality modeling. The modeling work will comply with EPA's final guidance on the use of models in attainment demonstrations and will use the latest methods and techniques to document modeling information and computer model performance evaluations.

**Permitting fees:** *§110(a)(2)(L) requires SIPs to require each major stationary source to pay permitting fees to cover the cost of reviewing, approving, implementing, and enforcing a permit.*

Funding for review of PSD and nonattainment NSR permits comes from permit-specific fees that are charged to the applicant (greenfield facilities) or from annual emission fees charged to Title V facilities (existing sources paying Title V annual emission fees that apply for major modifications under PSD or nonattainment NSR). The cost of reviewing, approving, implementing, and enforcing PSD and major nonattainment NSR permits for are covered as follows:

New construction (all major stationary sources that are not paying Title V annual emission fees)	TAPCR 1200-03-26-.02(5) requires each new source to pay a construction permit application filing/processing fee as set forth in 1200-03-26-.02(5)(g), Schedule A.
New construction or modifications at existing Title V facilities (sources subject to TAPCR 1200-03-09-.02(11))	Permitting costs are covered by Title V annual emission fees established pursuant to TAPCR 1200-03-26-.02(9). Pursuant to TAPCR 1200-03-26-.02(9)(a), once a major stationary source begins to pay Title V annual emission fees, it will not be subject to the construction permit fees of paragraph 1200-03-26-.02(5) for any additional construction occurring at the source.

For new construction, the fees charged to PSD and nonattainment NSR permit applicants reflect the reasonable cost of review, approval, implementation and enforcement of PSD and nonattainment NSR permits and are sufficient to operate the state's permitting program. For existing Title V facilities applying for major modifications, the Title V annual emission fees cover the reasonable cost of implementation and enforcement of PSD and nonattainment NSR permits after they have been issued.

**Consultation/participation by affected local entities:** *§110(a)(2)(M) requires States to provide for consultation and participation in SIP development by local political subdivisions affected by the SIP.*

TCA 68-201-105 authorizes and requires the Tennessee Air Pollution Control Board to promulgate rules and regulations to effect the intent and purpose of this part, pursuant to the provisions of the Uniform Administrative Procedures Act, compiled in title 4, chapter 5. TCA 4-5-202 (Uniform Administrative Procedures Act) requires agencies to precede all rulemaking with a notice and public hearing, except as specifically exempted. TCA 4-5-203 (Uniform Administrative Procedures Act) states that whenever an agency is required by law to hold a public hearing as part of its rulemaking process, the agency shall: (1) Transmit written notice of the hearings to the secretary of state for publication in the notice section of the administrative register web site and, (2) Take such other steps as it deems necessary to convey effective notice to persons who are likely to have an interest in the proposed rulemaking.

TCA 68-201-105(b)(7) authorizes and requires the Department of Environment and Conservation to advise, consult and cooperate with other agencies, persons or groups in matters pertaining to air pollution; and encourage

authorized air pollution agencies of political subdivisions to handle air pollution problems within their respective jurisdictions to the greatest extent possible and to provide technical assistance to political subdivisions.

TAPCR 1200-03-34 (Conformity) provides for inter-agency consultation on both transportation and general conformity related issues.

# **Attachment 1**

## **Tennessee Air Quality Act**